

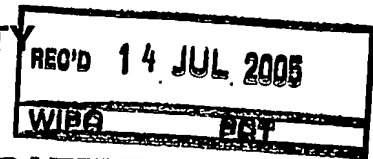
## PATENT COOPERATION TREATY


## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference		<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/EP2004/006085		International filing date (day/month/year) 04.06.2004		Priority date (day/month/year) 18.06.2003
International Patent Classification (IPC) or national classification and IPC C11D3/40, C11D3/00				
Applicant UNILEVER PLC et al				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 5 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand  15.12.2004		Date of completion of this report  15.07.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer  Bertran Nadal, J  Telephone No. +31 70 340-3924		



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/006085

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-34 as originally filed

**Claims, Numbers**

1-15 received on 15.12.2004 with letter of 05.10.2004

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☒ the claims, Nos. 3
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/006085

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1, 2
	No: Claims	3-15
Inventive step (IS)	Yes: Claims	1, 2
	No: Claims	3-15
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item I**

**Basis of the report**

The amendments filed with the letter dated 05.10.2004 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following: in present claim 3 "the combination comprises a red dye and a blue dye". In the application as filed, a reference to the combination of a red dye and a blue dye can only be found on page 34, corresponding to example 4, in which the dye Acid Black 1 is combined with either Acid Red 88 or Acid Red 150. There is no disclosure in the application as filed of this dye combination in connection with all the features of dependent claims 4-15. Furthermore, the terms "red dye" and "blue dye" are broad and unclear, since they appear to encompass dyes such as Acid Black 1, Acid Violet 17 and Direct Violet 51. Therefore, the reasoned statement under item V is based on claims 1-15 as filed with letter dated 05.10.2004, disregarding the feature of claim 3 "the combination comprises a red dye and a blue dye" (i.e., it is based on claims 1 and 2 as filed on 05.10.2004 and claims 1-13 as originally filed, which are currently numbered as 3-15).

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1 The following documents are referred to in this communication:

D1 : US 3 755 201 A

D2 : US 3 762 859 A

D3 : GB 1 247 189 A

2 Present claims 1, 2 and 3 have been drafted as separate independent claims. However, it is not clear if they relate to the same subject-matter and differ from each other only with regard to the definition of the subject-matter for which protection is sought or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the

requirements of Article 6 PCT.

- 3 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 3 is not new in the sense of Article 33(2) PCT.

Document D1 discloses a laundry treatment composition, such as a detergent composition, comprising a surfactant and a combination of dyes, the combination comprising a photostable dye, such as direct blue 1, which is substantive to cotton (cf. D1 column 1 lines 4-16, claims 1-7, examples). The compositions provide a blueing or whitening effect on washed laundry, which may be modulated depending on the dyes and amounts used. Even if the peak absorption wavelength on cotton is not explicitly disclosed, the nature of the dyes is the same as in the present application, and the same whitening effect is achieved, thus it appears that the peak absorption wavelength on cotton falls within the range claimed in present claim 3. The subject-matter of claim 3 is therefore not new.

Document D2 discloses a method and a composition for enhancing the apparent whiteness of fabrics during a laundering process. The composition comprises surfactants and a combination of dyes, such as acid blue 113 and direct violet 48 (cf. D2 column 1 line 27-column 2 line 65, claims 1, 4, 8, examples 3, 5, 14). The subject-matter of claim 3 is therefore not new.

Document D3 discloses a liquid composition for the treatment of fibres comprising a surfactant and a combination of two different dyes, at least one of them being substantive to cotton. The colour obtained upon mixture appears to absorb in the present claimed range, and even if no result is disclosed on cotton, it seems that the subject-matter of claim 3 is not new.

- 4 Even if the novelty objections raised above could be overcome, an inventive step would have to be demonstrated over document D1, which appears to represent the closest prior art (Article 33(3) PCT). The problem to be solved by the present invention may be regarded as to provide a laundry treatment composition that prevents the gradual loss

of whiteness on the clothes. This problem is known from the prior art and Document D1 teaches the same solution. Furthermore, D1 also teaches how to obtain a particular effect on laundry (i.e. a final colour) depending on the selected dyes and amounts (cf. column 3 paragraph 2).

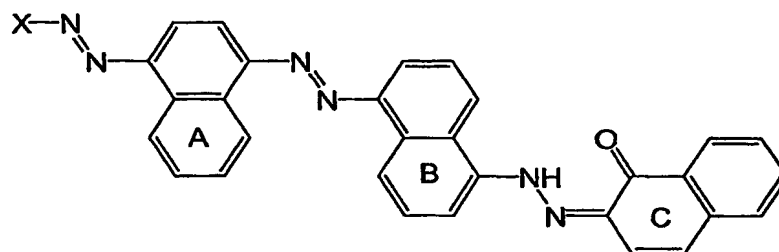
- 5    Dependent claims 4-15 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT):  
The features of dependent claims 4-15 have already been employed for the same purpose in a similar composition, see document D1.
  
- 6    The subject-matter of claims 1 and 2 appears to meet the requirements of Article 33(1) PCT. The documents cited in the International Search Report neither disclose nor suggest a composition according to claims 1 or 2.

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## CLAIMS

1. A laundry treatment composition which comprises a surfactant and from 0.0001 to 0.1 wt% of a combination of dyes which together have a visual effect on the human eye as a single dye having a peak absorption wavelength on cotton of from 540 nm to 650 nm, preferably from 570 nm to 630 nm, the combination comprising a photostable dye which is substantive to cotton, wherein the photostable dye is selected from the group comprising tris-azo direct blue dyes of the formula:



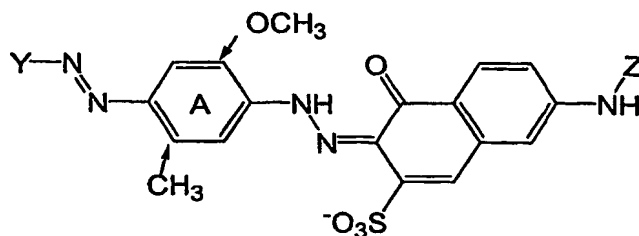
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where at least two of the A, B and C naphthyl rings are substituted by a sulphonate group, the C ring may be substituted at the 5 position by an NH<sub>2</sub> or NHPH group, X is a benzyl or naphthyl ring substituted with upto 2 sulphonate groups and may be substituted at 2 position with a OH group and may also be substituted with an NH<sub>2</sub> or NHPH group,

25 and bis-azo direct violet dyes of the formula:

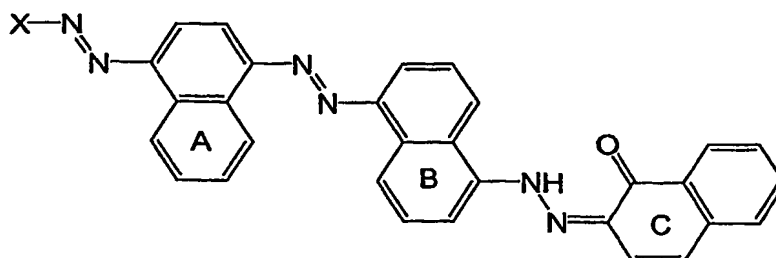
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where Z is H or phenyl, the A ring is preferably substituted by a methyl and methoxy group at the positions indicated by arrows, the A ring may also be a naphthyl ring, the Y group is a benzyl or naphthyl ring, which is substituted by sulphate group and may be mono or disubstituted by methyl groups.

2. A laundry treatment composition which comprises a surfactant and from 0.0001 to 0.1 wt% of a photostable dye which is substantive to cotton, the dye having a peak absorption wavelength on cotton of from 540 nm. to 650 nm, preferably from 570 nm to 630 nm, and wherein the photostable dye is selected from the group comprising tris-azo direct blue dyes of the formula:



where at least two of the A, B and C naphthyl rings are substituted by a sulphonate group, the C ring may be

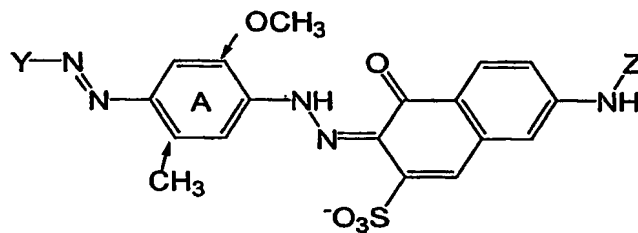


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substituted at the 5 position by an  $\text{NH}_2$  or  $\text{NHPh}$  group,  
X is a benzyl or naphthyl ring substituted with upto 2  
sulphonate groups and may be substituted at 2 position  
with a OH group and may also be substituted with an  $\text{NH}_2$   
or  $\text{NHPh}$  group,

and bis-azo direct violet dyes of the formula:



where Z is H or phenyl, the A ring is preferably substituted  
by a methyl and methoxy group at the positions  
indicated by arrows, the A ring may also be a naphthyl  
ring, the Y group is a benzyl or naphthyl ring, which  
is substituted by sulphate group and may be mono or  
disubstituted by methyl groups.

3. A laundry treatment composition which comprises a  
surfactant and from 0.0001 to 0.1 wt% of a combination  
of dyes which together have a visual effect on the  
human eye as a single dye having a peak absorption  
wavelength on cotton of from 540 nm to 650 nm,  
preferably from 570 nm to 630 nm, the combination  
comprising a photostable dye which is substantive to

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cotton, wherein the combination comprises a red dye and a blue dye.

4. A composition as claimed in claim 3, which is a laundry detergent composition, preferably a particulate laundry detergent composition.
5. A composition as claimed in claim 3, which is a laundry fabric conditioner.
6. A composition as claimed in claim 4 or 5, wherein the surfactant is a non-soap surfactant.
7. A composition as claimed in claim 6, wherein the surfactant is an anionic or cationic surfactant.
8. A composition as claimed in claim 7, wherein the surfactant is C<sub>8</sub>-C<sub>15</sub> linear alkyl benzene sulphonate.
9. A composition as claimed in any one of claims 3 to 8, which comprises from 5 to 60 wt% of surfactant.
10. A composition as claimed in any preceding claim, which comprises fluorescer.
11. A composition as claimed in any preceding claim, wherein the photostable dye has a substantivity to cotton in a standard test of greater than 7%, preferably from 8 to 80%, more preferably from 10 to 60%, most preferably from 15 to 40%, wherein the standard test is with a photostable dye concentration

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such that the solution has an optical density of approximately 1 (5 cm pathlength) at the maximum absorption of the dye in the visible wavelengths (400-700nm), a surfactant concentration of 0.3 g/L and under wash conditions of a liquor to cloth ratio of 45:1, temperature of 20°C, soak times of 45 minutes, agitation time of 10 minutes.

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12. A composition as claimed in any preceding claim, which comprises from 0.0005 to 0.05 wt% of dye, preferably from 0.001 to 0.01 wt%, more preferably from 0.002 to 0.008 wt%.
13. A composition as claimed in any one of claims 3 to 12, wherein the photostable dye is an azo, anthraquinone or triarylmethane dye, preferably azo.
14. A composition as claimed in claim 13 wherein the photostable dye is selected from the group of acid and direct dyes, and preferably is an acid dye.
15. A composition as claimed in claim 14, wherein the photostable dye is selected from acid black 1, acid violet 17, direct blue 71, direct violet 51, direct blue 1, acid red 88, acid red 150 or mixtures thereof.